CLAIMS

1. *(PREVIOUSLY PRESENTED)* An apparatus including an automated X-ray imaging system for producing a plurality of X-ray imaging signals, comprising:

an X-ray emission system responsive to at least one emission control signal by providing at least first and second doses of X-ray radiation, wherein said second dose differs from said first dose in one or more of a plurality of X-ray radiation characteristics, and said first and second doses are at least partially non-contemporaneous;

an X-ray detection system responsive to at least one detection control signal and for placement in relation to said X-ray emission system to be responsive to at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject disposed substantially between said X-ray emission and detection systems by providing corresponding first and second image signals, wherein said first and second image signals correspond to said portion and a sub-portion of said subject, respectively, and said sub-portion is contained at least in part within said portion and does not consist of all of said portion; and

a control system, coupled to said X-ray emission and detection systems, responsive to at least said first image signal by providing said emission and detection control signals, wherein, in relation to a portion of said first image signal corresponding to said sub-portion of said subject, said second image signal differs from said first image signal in one or more of a plurality of image characteristics.

2. *(PREVIOUSLY PRESENTED)* The apparatus of claim 1, wherein said X-ray emission system comprises a collimator, and said one or more of a plurality of X-ray radiation characteristics comprises at least one of intensity, focal spot and collimation.

3. *(ORIGINAL)* The apparatus of claim 1, wherein said one or more of a plurality of image characteristics comprises image resolution.

4. *(PREVIOUSLY PRESENTED)* The apparatus of claim 1, wherein:

said X-ray emission system comprises a collimator;

said one or more of a plurality of X-ray radiation characteristics comprises at least one of intensity, focal spot and collimation; and

said one or more of a plurality of image characteristics comprises image resolution.

5. *(CURRENTLY AMENDED)* The apparatus of claim 1, wherein:

said ~~subject~~ portion of said subject defines a target region for said at least a portion of said first and second doses of X-ray radiation;

said target region is disposed in a first spatial relation to said X-ray emission system;

said target region is disposed in a second spatial relation to said X-ray detection system; and

said X-ray emission system is further responsive to said at least one emission control signal by controlling said first spatial relation.

6. *(CURRENTLY AMENDED)* The apparatus of claim 1, wherein:

said ~~subject~~ portion of said subject defines a target region for said at least a portion of said first and second doses of X-ray radiation;

said target region is disposed in a first spatial relation to said X-ray emission system;

said target region is disposed in a second spatial relation to said X-ray detection system; and

said X-ray detection system is further responsive to said at least one detection control signal by controlling said second spatial relation.

7. *(CURRENTLY AMENDED)* The apparatus of claim 1, wherein:

said ~~subject~~ portion of said subject defines a target region for said at least a portion of said first and second doses of X-ray radiation;

said target region is disposed in a first spatial relation to said X-ray emission system;

said target region is disposed in a second spatial relation to said X-ray detection system;

said X-ray emission system is further responsive to said at least one emission control

signal by controlling said first spatial relation; and

said X-ray detection system is further responsive to said at least one detection control signal by controlling said second spatial relation.

8. *(ORIGINAL)* The apparatus of claim 1, wherein said X-ray emission system comprises:

an X-ray source responsive to a first portion of said at least one emission control signal by providing X-ray radiation with at least one of said plurality of X-ray radiation characteristics corresponding to said first portion of said at least one emission control signal; and

a collimator coupled to said X-ray source and responsive to a second portion of said at least one emission control signal by conveying said X-ray radiation with at least another of said plurality of X-ray radiation characteristics corresponding to said second portion of said at least one emission control signal.

9. *(ORIGINAL)* The apparatus of claim 1, wherein said X-ray detection system comprises detection circuitry responsive to a first portion of said at least one detection control signal and said respective portions of said first and second doses of X-ray radiation by providing a plurality of pixel signals.

10. *(CURRENTLY AMENDED)* The apparatus of claim 9, wherein said X-ray detection system further comprises processing circuitry coupled to said ~~detector~~ detection circuitry and responsive to a second portion of said at least one detection control signal and said plurality of pixel signals by providing said first and second image signals.

11. *(ORIGINAL)* The apparatus of claim 1, wherein said control system comprises:

receiving circuitry responsive to said first and second image signals by storing a corresponding plurality of image data;

processing circuitry, coupled to said receiving circuitry, to selectively process said plurality of stored image data and a plurality of reference data and in response thereto provide a

plurality of control data; and

control circuitry coupled to said processing circuitry and responsive to said plurality of control data by providing said emission and detection control signals.

12. *(ORIGINAL)* The apparatus of claim 11, wherein said receiving circuitry comprises data memory circuitry.

13. *(ORIGINAL)* The apparatus of claim 11, wherein said processing circuitry comprises:

data memory circuitry to store said plurality of reference data; and

a computer, coupled to said data memory circuitry, to process said pluralities of reference and stored image data and in response thereto provide said plurality of control data.

14. *(ORIGINAL)* The apparatus of claim 1, wherein said at least one emission control signal comprises at least one signal for controlling at least one of a plurality of operating parameters for said X-ray emission system.

15. *(ORIGINAL)* The apparatus of claim 14, wherein said at least one of a plurality of operating parameters for said X-ray emission system comprises at least one of a voltage, a current, a focal spot and collimation.

16. *(ORIGINAL)* The apparatus of claim 1, wherein said at least one detection control signal comprises at least one signal for controlling at least one of a plurality of operating parameters for said X-ray detection system.

17. *(PREVIOUSLY PRESENTED)* The apparatus of claim 16, wherein said at least one of a plurality of operating parameters for said X-ray detection system comprises at least one of bias and dynamic range.

18. *(PREVIOUSLY PRESENTED)* A automated method for producing a plurality of X-ray imaging signals corresponding to selected views of a subject with selectively variable image resolutions, comprising:

receiving at least one emission control signal;

generating, in response to said at least one emission control signal, at least first and second doses of X-ray radiation, wherein said second dose differs from said first dose in one or more of a plurality of X-ray radiation characteristics, and said first and second doses are at least partially non-contemporaneous;

receiving at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject;

receiving at least one detection control signal;

generating, in response to said at least one detection control signal and said at least a portion of said first and second doses of X-ray radiation, first and second image signals, wherein said first and second image signals correspond to said portion and a sub-portion of said subject, respectively, and said sub-portion is contained at least in part within said portion and does not consist of all of said portion;

processing said first and second image signals; and

generating, in response to at least said processed first image signal, said emission and detection control signals, wherein, in relation to a portion of said first image signal corresponding to said sub-portion of said subject, said second image signal differs from said first image signal in one or more of a plurality of image characteristics.

19. *(PREVIOUSLY PRESENTED)* The method of claim 18, wherein:

said generating, in response to said at least one emission control signal, at least first and second doses of X-ray radiation comprises controlling a collimator; and

said one or more of a plurality of X-ray radiation characteristics comprises at least one of intensity, focal spot and collimation.

20. *(ORIGINAL)* The method of claim 18, wherein said one or more of a plurality of

image characteristics comprises image resolution.

21. *(PREVIOUSLY PRESENTED)* The method of claim 18, wherein:

said generating, in response to said at least one emission control signal, at least first and second doses of X-ray radiation comprises controlling a collimator;

said one or more of a plurality of X-ray radiation characteristics comprises at least one of intensity, focal spot and collimation; and

said one or more of a plurality of image characteristics comprises image resolution.

22. *(CURRENTLY AMENDED)* The method of claim 18, wherein:

said generating, in response to said at least one emission control signal, at least first and second doses of X-ray radiation comprises generating with an X-ray emission system, in response to said at least one emission control signal, at least first and second doses of X-ray radiation;

said receiving at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject comprises receiving with an X-ray detection system at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject disposed substantially between said X-ray emission and detection systems;

said ~~subject~~ portion of said subject defines a target region for said at least a portion of said first and second doses of X-ray radiation; and

said method further comprises

disposing said target region in a first spatial relation to said X-ray emission system,

disposing said target region in a second spatial relation to said X-ray detection system, and

controlling said first spatial relation in further response to said at least one emission control signal.

23. *(CURRENTLY AMENDED)* The method of claim 18, wherein:

said generating, in response to said at least one emission control signal, at least first and second doses of X-ray radiation comprises generating with an X-ray emission system, in response to said at least one emission control signal, at least first and second doses of X-ray radiation;

said receiving at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject comprises receiving with an X-ray detection system at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject disposed substantially between said X-ray emission and detection systems;

said ~~subject~~ portion of said subject defines a target region for said at least a portion of said first and second doses of X-ray radiation; and

said method further comprises

disposing said target region in a first spatial relation to said X-ray emission system,

disposing said target region in a second spatial relation to said X-ray detection system, and

controlling said second spatial relation in further response to said at least one detection control signal.

24. *(CURRENTLY AMENDED)* The method of claim18, wherein:

said generating, in response to said at least one emission control signal, at least first and second doses of X-ray radiation comprises generating with an X-ray emission system, in response to said at least one emission control signal, at least first and second doses of X-ray radiation;

said receiving at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject comprises receiving with an X-ray detection system at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject disposed substantially between said X-ray emission and

detection systems;

said ~~subject~~ portion of said subject defines a target region for said at least a portion of said first and second doses of X-ray radiation; and

said method further comprises

disposing said target region in a first spatial relation to said X-ray emission system,

disposing said target region in a second spatial relation to said X-ray detection system,

controlling said first spatial relation in further response to said at least one emission control signal, and

controlling said second spatial relation in further response to said at least one detection control signal.

25. *(ORIGINAL)* The method of claim 18, wherein said generating, in response to said at least one emission control signal, at least first and second doses of X-ray radiation comprises:

generating, in response to a first portion of said at least one emission control signal, X-ray radiation with at least one of said plurality of X-ray radiation characteristics corresponding to said first portion of said at least one emission control signal; and

collimating, in response to a second portion of said at least one emission control signal, said X-ray radiation.

26. *(PREVIOUSLY PRESENTED)* The method of claim 25, wherein said generating, in response to said at least one detection control signal and said at least a portion of said first and second doses of X-ray radiation, first and second image signals comprises generating, in response to a first portion of said at least one detection control signal, a plurality of pixel signals.

27. *(PREVIOUSLY PRESENTED)* The method of claim 26, wherein said generating, in response to said at least one detection control signal and said at least a portion of said first and

second doses of X-ray radiation, first and second image signals further comprises processing said plurality of pixel signals to generate said first and second image signals.

28. *(ORIGINAL)* The method of claim 18, wherein said generating, in response to said processed first and second image signals, said emission and detection control signals comprises storing a plurality of image data corresponding to said first and second image signals.

29. *(ORIGINAL)* The method of claim 28, wherein said generating, in response to said processed first and second image signals, said emission and detection control signals further comprises processing said plurality of stored image data and a plurality of reference data and in response thereto generating a plurality of control data.

30. *(ORIGINAL)* The method of claim 29, wherein said generating, in response to said processed first and second image signals, said emission and detection control signals further comprises generating, in response to said plurality of control data, said emission and detection control signals.

31. *(ORIGINAL)* The method of claim 18, wherein said generating, in response to said processed first and second image signals, said emission and detection control signals comprises generating at least one signal for controlling at least one of a plurality of parameters for said generating of said at least first and second doses of X-ray radiation.

32. *(ORIGINAL)* The method of claim 31, wherein said at least one of a plurality of parameters for said generating of said at least first and second doses of X-ray radiation comprises at least one of a voltage, a current, a focal spot and collimation.

33. *(ORIGINAL)* The method of claim 18, wherein said generating, in response to said processed first and second image signals, said emission and detection control signals comprises generating at least one signal for controlling at least one of a plurality of parameters

for said generating of said first and second image signals.

34. *(ORIGINAL)* The method of claim 33, wherein said at least one of a plurality of parameters for said generating of said first and second image signals comprises at least one of bias and dynamic range.

35. *(PREVIOUSLY PRESENTED)* An apparatus including an automated X-ray imaging system for producing a plurality of X-ray imaging signals, comprising:

an X-ray emission system responsive to at least one emission control signal by providing at least first and second doses of X-ray radiation, wherein said second dose differs from said first dose in one or more of a plurality of X-ray radiation characteristics, and said first and second doses are at least partially non-contemporaneous;

an X-ray detection system responsive to at least one detection control signal and for placement in relation to said X-ray emission system to be responsive to at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject disposed substantially between said X-ray emission and detection systems by providing corresponding first and second pluralities of image signals, wherein said first and second pluralities of image signals correspond to said portion and a sub-portion of said subject, respectively, and said sub-portion is contained at least in part within said portion and does not consist of all of said portion; and

a control system, coupled to said X-ray emission and detection systems, responsive to at least said first plurality of image signals by providing said emission and detection control signals, wherein, in relation to a portion of said first plurality of image signals corresponding to said sub-portion of said subject, said second plurality of image signals differs from said first plurality of image signals in one or more of a plurality of multi-dimensional image characteristics.

36. *(PREVIOUSLY PRESENTED)* The apparatus of claim 35, wherein said X-ray emission system includes a collimator, and said one or more of a plurality of X-ray radiation

characteristics comprises at least one of intensity, focal spot and collimation.

37. *(PREVIOUSLY PRESENTED)* The apparatus of claim 35, wherein said one or more of a plurality of multi-dimensional image characteristics comprises image resolution.

38. *(PREVIOUSLY PRESENTED)* The apparatus of claim 35, wherein:

said X-ray emission system includes a collimator;

said one or more of a plurality of X-ray radiation characteristics comprises at least one of intensity, focal spot and collimation; and

said one or more of a plurality of multi-dimensional image characteristics comprises image resolution.

39. *(CURRENTLY AMENDED)* The apparatus of claim 35, wherein:

said ~~subject~~ portion of said subject defines a target region for said at least a portion of said first and second doses of X-ray radiation;

said target region is disposed in a plurality of spatial relations to said X-ray emission and detection systems; and

said X-ray emission system is further responsive to said at least one emission control signal by controlling at least one of said plurality of spatial relations.

40. *(CURRENTLY AMENDED)* The apparatus of claim 35, wherein:

said ~~subject~~ portion of said subject defines a target region for said at least a portion of said first and second doses of X-ray radiation;

said target region is disposed in a plurality of spatial relations to said X-ray emission and detection systems; and

said X-ray detection system is further responsive to said at least one detection control signal by controlling at least one of said plurality of spatial relations.

41. *(CURRENTLY AMENDED)* The apparatus of claim 35, wherein:

said ~~subject~~ portion of said subject defines a target region for said at least a portion of said first and second doses of X-ray radiation;

said target region is disposed in a plurality of spatial relations to said X-ray emission and detection systems;

said X-ray emission system is further responsive to said at least one emission control signal by controlling at least a first one of said plurality of spatial relations; and

said X-ray detection system is further responsive to said at least one detection control signal by controlling at least a second one of said plurality of spatial relations.

42. *(PREVIOUSLY PRESENTED)* The apparatus of claim 35, wherein said X-ray emission system comprises:

an X-ray source responsive to a first portion of said at least one emission control signal by providing X-ray radiation with at least one of said plurality of X-ray radiation characteristics corresponding to said first portion of said at least one emission control signal; and

a collimator coupled to said X-ray source and responsive to a second portion of said at least one emission control signal by conveying said X-ray radiation with at least another of said plurality of X-ray radiation characteristics corresponding to said second portion of said at least one emission control signal.

43. *(PREVIOUSLY PRESENTED)* The apparatus of claim 35, wherein said X-ray detection system comprises detection circuitry responsive to a first portion of said at least one detection control signal and said respective portions of said first and second doses of X-ray radiation by providing a plurality of pixel signals.

44. *(CURRENTLY AMENDED)* The apparatus of claim 43, wherein said X-ray detection system further comprises processing circuitry coupled to said ~~detector~~ detection circuitry and responsive to a second portion of said at least one detection control signal and said plurality of pixel signals by providing said first and second pluralities of image signals.

45. *(PREVIOUSLY PRESENTED)* The apparatus of claim 35, wherein said control system comprises:

receiving circuitry responsive to said first and second pluralities of image signals by storing a corresponding plurality of image data;

processing circuitry, coupled to said receiving circuitry, to selectively process said plurality of stored image data and a plurality of reference data and in response thereto provide a plurality of control data; and

control circuitry coupled to said processing circuitry and responsive to said plurality of control data by providing said emission and detection control signals.

46. *(PREVIOUSLY PRESENTED)* The apparatus of claim 45, wherein said receiving circuitry comprises data memory circuitry.

47. *(PREVIOUSLY PRESENTED)* The apparatus of claim 45, wherein said processing circuitry comprises:

data memory circuitry to store said plurality of reference data; and

a computer, coupled to said data memory circuitry, to process said pluralities of reference and stored image data and in response thereto provide said plurality of control data.

48. *(PREVIOUSLY PRESENTED)* The apparatus of claim 35, wherein said at least one emission control signal comprises at least one signal for controlling at least one of a plurality of operating parameters for said X-ray emission system.

49. *(PREVIOUSLY PRESENTED)* The apparatus of claim 48, wherein said at least one of a plurality of operating parameters for said X-ray emission system comprises at least one of a voltage, a current, a focal spot and collimation.

50. *(PREVIOUSLY PRESENTED)* The apparatus of claim 35, wherein said at least one detection control signal comprises at least one signal for controlling at least one of a plurality

of operating parameters for said X-ray detection system.

51. *(PREVIOUSLY PRESENTED)* The apparatus of claim 50, wherein said at least one of a plurality of operating parameters for said X-ray detection system comprises at least one of bias and dynamic range.

52. *(PREVIOUSLY PRESENTED)* A automated method for producing a plurality of X-ray imaging signals corresponding to selected views of a subject with selectively variable image resolutions, comprising:

receiving at least one emission control signal;

generating, in response to said at least one emission control signal, at least first and second doses of X-ray radiation, wherein said second dose differs from said first dose in one or more of a plurality of X-ray radiation characteristics, and said first and second doses are at least partially non-contemporaneous;

receiving at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject;

receiving at least one detection control signal;

generating, in response to said at least one detection control signal and said at least a portion of said first and second doses of X-ray radiation, first and second pluralities of image signals, wherein said first and second pluralities of image signals correspond to said portion and a sub-portion of said subject, respectively, and said sub-portion is contained at least in part within said portion and does not consist of all of said portion;

processing said first and second pluralities of image signals; and

generating, in response to at least said processed first plurality of image signals, said emission and detection control signals, wherein, in relation to a portion of said first plurality of image signals corresponding to said sub-portion of said subject, said second plurality of image signals differs from said first plurality of image signals in one or more of a plurality of multi-dimensional image characteristics.

53. *(PREVIOUSLY PRESENTED)* The method of claim 52, wherein:

said generating, in response to said at least one emission control signal, at least first and second doses of X-ray radiation comprises controlling a collimator; and

said one or more of a plurality of X-ray radiation characteristics comprises at least one of intensity, focal spot and collimation.

54. *(PREVIOUSLY PRESENTED)* The method of claim 52, wherein said one or more of a plurality of multi-dimensional image characteristics comprises image resolution.

55. *(PREVIOUSLY PRESENTED)* The method of claim 52, wherein:

said generating, in response to said at least one emission control signal, at least first and second doses of X-ray radiation comprises controlling a collimator;

said one or more of a plurality of X-ray radiation characteristics comprises at least one of intensity, focal spot and collimation; and

said one or more of a plurality of multi-dimensional image characteristics comprises image resolution.

56. *(CURRENTLY AMENDED)* The method of claim 52, wherein:

said generating, in response to said at least one emission control signal, at least first and second doses of X-ray radiation comprises generating with an X-ray emission system, in response to said at least one emission control signal, at least first and second doses of X-ray radiation;

said receiving at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject comprises receiving with an X-ray detection system at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject disposed substantially between said X-ray emission and detection systems;

said ~~subject~~ portion of said subject defines a target region for said at least a portion of said first and second doses of X-ray radiation; and

said method further comprises

disposing said target region in a plurality of spatial relations to said X-ray emission and detection systems, and

controlling at least one of said plurality of spatial relations in further response to said at least one emission control signal.

57. *(CURRENTLY AMENDED)* The method of claim 52, wherein:

said generating, in response to said at least one emission control signal, at least first and second doses of X-ray radiation comprises generating with an X-ray emission system, in response to said at least one emission control signal, at least first and second doses of X-ray radiation;

said receiving at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject comprises receiving with an X-ray detection system at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject disposed substantially between said X-ray emission and detection systems;

said ~~subject~~ portion of said subject defines a target region for said at least a portion of said first and second doses of X-ray radiation; and

said method further comprises

disposing said target region in a plurality of spatial relations to said X-ray emission and detection systems, and

controlling at least one of said plurality of spatial relations in further response to said at least one detection control signal.

58. *(CURRENTLY AMENDED)* The method of claim 52, wherein:

said generating, in response to said at least one emission control signal, at least first and second doses of X-ray radiation comprises generating with an X-ray emission system, in response to said at least one emission control signal, at least first and second doses of X-ray radiation;

said receiving at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject comprises receiving with an X-ray detection system at least a portion of said first and second doses of X-ray radiation following exposure thereto of a portion of a subject disposed substantially between said X-ray emission and detection systems;

said ~~subject~~ portion of said subject defines a target region for said at least a portion of said first and second doses of X-ray radiation; and

said method further comprises

disposing said target region in a plurality of spatial relations to said X-ray emission and detection systems,

controlling at least a first one of said plurality of spatial relations in further response to said at least one emission control signal, and

controlling at least a second one of said plurality of spatial relations in further response to said at least one detection control signal.

59. *(PREVIOUSLY PRESENTED)* The method of claim 52, wherein said generating, in response to said at least one emission control signal, at least first and second doses of X-ray radiation comprises:

generating, in response to a first portion of said at least one emission control signal, X-ray radiation with at least one of said plurality of X-ray radiation characteristics corresponding to said first portion of said at least one emission control signal; and

collimating, in response to a second portion of said at least one emission control signal, said X-ray radiation.

60. *(PREVIOUSLY PRESENTED)* The method of claim 59, wherein said generating, in response to said at least one detection control signal and said at least a portion of said first and second doses of X-ray radiation, first and second pluralities of image signals comprises generating, in response to a first portion of said at least one detection control signal, a plurality of pixel signals.

61. *(PREVIOUSLY PRESENTED)* The method of claim 60, wherein said generating, in response to said at least one detection control signal and said at least a portion of said first and second doses of X-ray radiation, first and second pluralities of image signals further comprises processing said plurality of pixel signals to generate said first and second pluralities of image signals.

62. *(PREVIOUSLY PRESENTED)* The method of claim 52, wherein said generating, in response to said processed first and second pluralities of image signals, said emission and detection control signals comprises storing a plurality of image data corresponding to said first and second pluralities of image signals.

63. *(PREVIOUSLY PRESENTED)* The method of claim 62, wherein said generating, in response to said processed first and second pluralities of image signals, said emission and detection control signals further comprises processing said plurality of stored image data and a plurality of reference data and in response thereto generating a plurality of control data.

64. *(PREVIOUSLY PRESENTED)* The method of claim 63, wherein said generating, in response to said processed first and second pluralities of image signals, said emission and detection control signals further comprises generating, in response to said plurality of control data, said emission and detection control signals.

65. *(PREVIOUSLY PRESENTED)* The method of claim 52, wherein said generating, in response to said processed first and second pluralities of image signals, said emission and detection control signals comprises generating at least one signal for controlling at least one of a plurality of parameters for said generating of said at least first and second doses of X-ray radiation.

66. *(PREVIOUSLY PRESENTED)* The method of claim 65, wherein said at least one

of a plurality of parameters for said generating of said at least first and second doses of X-ray radiation comprises at least one of a voltage, a current, a focal spot and collimation.

67. *(PREVIOUSLY PRESENTED)* The method of claim 52, wherein said generating, in response to said processed first and second pluralities of image signals, said emission and detection control signals comprises generating at least one signal for controlling at least one of a plurality of parameters for said generating of said first and second pluralities of image signals.

68. *(PREVIOUSLY PRESENTED)* The method of claim 67, wherein said at least one of a plurality of parameters for said generating of said first and second pluralities of image signals comprises at least one of bias and dynamic range.